AMENDMENTS

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for sampling a high temperature process stream, wherein a temperature of the high temperature process stream is above a boiling point of a target sample component at a process stream pressure, the method comprising the steps of:

   evacuating a low temperature zone of a sampling system using a first vacuum pump;

   admitting a portion of the high temperature process stream into the low temperature zone through an orifice;

   maintaining a stable vacuum pressure in the low temperature zone;

   introducing a sample from the low temperature zone of the sampling system into test equipment through a sample introduction valve, the test equipment comprising a mass spectrometer:

   evacuating with a second vacuum pump a chamber of the mass spectrometer to a pressure lower than the stable vacuum pressure in the low temperature zone; and

   maintaining a temperature of the low temperature zone above a boiling point of the target sample component at the stable vacuum pressure.

2. (Original) The method of claim 1, wherein the orifice has a diameter of between 0.005 inches and 0.025 inches.

3. (Currently amended) The method of claim 1, wherein the step of maintaining a stable vacuum pressure in the low temperature zone includes metering flow to the first vacuum pump.

4. (Currently amended) The method of claim 1, wherein the step of maintaining a stable vacuum pressure in the low temperature zone includes controlling the first vacuum pump.

5. -6. (Canceled)

7. (Original) The method of claim 1, wherein the test equipment includes a mass

spectrometer.

8. (Original) The method of claim 1, wherein the test equipment includes a FT-ICR mass spectrometer.

9. (Currently amended) The method of claim 8, wherein the FT-ICR mass spectrometer includes ~~a~~ the second vacuum pump, and the method further comprises the step of evacuating with the second vacuum pump a chamber of the FT-ICR to a pressure lower than the stable vacuum pressure in the low temperature zone.

10. (Original) The method of claim 1, wherein the stable vacuum pressure is between a pressure of the process stream and a high vacuum pressure of a vacuum chamber of the test equipment.

11. – 22. (Canceled)